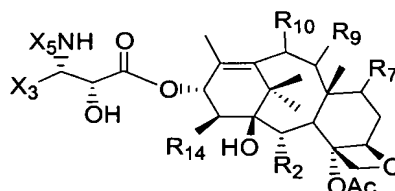


Claims

1. A taxane having the formula



wherein

$R_2$  is acyloxy;

$R_7$  is  $R_{7a}COO^-$ ;

$R_{7a}$  is hydrocarbyl, substituted hydrocarbyl, or heterocyclo wherein said hydrocarbyl or substituted hydrocarbyl contains carbon atoms in the alpha and beta positions relative to the carbon atom of which  $R_{7a}$  is a substituent and wherein said substituted hydrocarbyl is substituted with a group selected from halogen, heterocyclo, alkoxy, alkenoxy, alkynoxy, aryloxy, hydroxy, protected hydroxy, acyloxy, nitro, cyano, thiol, ketals, acetals and ethers;

$R_9$  is keto, hydroxy, or acyloxy;

$R_{10}$  is hydroxy;

$R_{14}$  is hydrido or hydroxy;

$X_3$  is substituted or unsubstituted alkyl, alkenyl, alkynyl or heterocyclo;

$X_5$  is  $-COX_{10}$ ,  $-COOX_{10}$ , or  $-CONHX_{10}$ ;

$X_{10}$  is hydrocarbyl, substituted hydrocarbyl, or heterocyclo; and

Ac is acetyl.

2. The taxane of claim 1 wherein  $R_{7a}$  is substituted or unsubstituted  $C_2$  -  $C_8$  alkyl,  $C_2$  -  $C_8$  alkenyl or  $C_2$  -  $C_8$  alkynyl.

3. The taxane of claim 2 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1$  -  $C_8$  alkyl,  $C_2$  -  $C_8$  alkenyl, or  $C_2$  -  $C_8$  alkynyl.

4. The taxane of claim 2 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-

pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

5. The taxane of claim 2 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

6. The taxane of claim 2 wherein  $R_{14}$  is hydrido.

7. The taxane of claim 6 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

8. The taxane of claim 6 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

9. The taxane of claim 6 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

10. The taxane of claim 2 wherein  $R_2$  is benzoyloxy.

11. The taxane of claim 10 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

12. The taxane of claim 10 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

13. The taxane of claim 10 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

14. The taxane of claim 2 wherein  $R_{14}$  is hydrido and  $R_9$  is keto.

15. The taxane of claim 14 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

16. The taxane of claim 14 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

17. The taxane of claim 14 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

18. The taxane of claim 2 wherein  $R_2$  is benzoyloxy and  $R_9$  is keto.

19. The taxane of claim 18 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

20. The taxane of claim 18 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

21. The taxane of claim 18 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

22. The taxane of claim 2 wherein  $R_{14}$  is hydrido and  $R_2$  is benzoyloxy.

23. The taxane of claim 22 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

24. The taxane of claim 22 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

25. The taxane of claim 22 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

26. The taxane of claim 2 wherein  $R_{14}$  is hydrido,  $R_9$  is keto, and  $R_2$  is benzoyloxy.

27. The taxane of claim 26 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

28. The taxane of claim 26 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

29. The taxane of claim 26 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

30. The taxane of claim 1 wherein  $R_{7a}$  is  $C_2 - C_8$  alkyl.

31. The taxane of claim 30 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

32. The taxane of claim 30 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

33. The taxane of claim 30 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

34. The taxane of claim 30 wherein  $R_{14}$  is hydrido.

35. The taxane of claim 34 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-

thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

36. The taxane of claim 34 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

37. The taxane of claim 34 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

38. The taxane of claim 30 wherein R<sub>2</sub> is benzoyloxy.

39. The taxane of claim 38 wherein X<sub>3</sub> is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

40. The taxane of claim 38 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

41. The taxane of claim 38 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

42. The taxane of claim 30 wherein R<sub>14</sub> is hydrido and R<sub>9</sub> is keto.

43. The taxane of claim 42 wherein X<sub>3</sub> is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

44. The taxane of claim 42 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

45. The taxane of claim 42 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

46. The taxane of claim 30 wherein  $R_2$  is benzoyloxy and  $R_9$  is keto.

47. The taxane of claim 46 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

48. The taxane of claim 46 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

49. The taxane of claim 46 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

50. The taxane of claim 30 wherein  $R_{14}$  is hydrido and  $R_2$  is benzoyloxy.

51. The taxane of claim 50 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

52. The taxane of claim 50 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

53. The taxane of claim 50 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

54. The taxane of claim 30 wherein  $R_{14}$  is hydrido,  $R_9$  is keto, and  $R_2$  is benzoyloxy.

55. The taxane of claim 54 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$

alkynyl.

56. The taxane of claim 54 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

57. The taxane of claim 54 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

58. The taxane of claim 1 wherein  $R_{7a}$  is ethyl.

59. The taxane of claim 58 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

60. The taxane of claim 58 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

61. The taxane of claim 58 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

62. The taxane of claim 58 wherein  $R_{14}$  is hydrido.

63. The taxane of claim 62 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

64. The taxane of claim 62 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

65. The taxane of claim 62 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$

is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

66. The taxane of claim 58 wherein  $R_2$  is benzoyloxy.

67. The taxane of claim 66 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

68. The taxane of claim 66 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

69. The taxane of claim 66 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

70. The taxane of claim 58 wherein  $R_{14}$  is hydrido and  $R_9$  is keto.

71. The taxane of claim 70 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

72. The taxane of claim 70 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

73. The taxane of claim 70 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

74. The taxane of claim 58 wherein  $R_2$  is benzoyloxy and  $R_9$  is keto.

75. The taxane of claim 74 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.



76. The taxane of claim 74 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl.

77. The taxane of claim 74 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

78. The taxane of claim 58 wherein  $R_{14}$  is hydrido and  $R_2$  is benzoyloxy.

79. The taxane of claim 78 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl.

80. The taxane of claim 78 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl.

81. The taxane of claim 78 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

82. The taxane of claim 58 wherein  $R_{14}$  is hydrido,  $R_9$  is keto, and  $R_2$  is benzoyloxy.

83. The taxane of claim 82 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl.

84. The taxane of claim 82 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl.

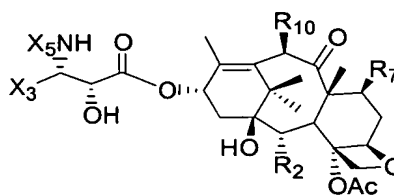
85. The taxane of claim 82 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

86. The taxane of claim 82 wherein  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

87. The taxane of claim 86 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

88. The taxane of claim 86 wherein  $X_3$  is cycloalkyl.

89. A taxane having the formula



$R_2$  is benzoyloxy;

$R_7$  is  $R_{7a}\text{COO}-$ ;

$R_{10}$  is hydroxy;

$X_3$  is substituted or unsubstituted alkyl, alkenyl, alkynyl, or heterocyclo;

$X_5$  is  $-\text{COX}_{10}$ ,  $-\text{COOX}_{10}$ , or  $-\text{CONHX}_{10}$ ;

$X_{10}$  is hydrocarbyl, substituted hydrocarbyl, or heterocyclo; and

$R_{7a}$  is hydrocarbyl, substituted hydrocarbyl, or heterocyclo wherein said hydrocarbyl or substituted hydrocarbyl contains carbon atoms in the alpha and beta positions relative to the carbon of which  $R_{7a}$  is a substituent and wherein said substituted hydrocarbyl is substituted with a group selected from halogen, heterocyclo, alkoxy, alkenoxy, alkynoxy, aryloxy, hydroxy, protected hydroxy, acyloxy, nitro, cyano, thiol, ketals, acetals and ethers; and

Ac is acetyl.

90. The taxane of claim 89 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

91. The taxane of claim 90 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

92. The taxane of claim 90 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

93. The taxane of claim 89 wherein  $X_3$  is furyl or thienyl.

94. The taxane of claim 93 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

95. The taxane of claim 93 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

96. The taxane of claim 90 wherein  $X_3$  is cycloalkyl.

97. The taxane of claim 96 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

98. The taxane of claim 96 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

99. The taxane of claim 90 wherein  $X_3$  is isobutenyl.

100. The taxane of claim 99 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

101. The taxane of claim 99 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$

is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

102. The taxane of claim 89 wherein  $R_{7a}$  is ethyl or propyl.

103. The taxane of claim 102 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

104. The taxane of claim 103 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

105. The taxane of claim 103 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

106. The taxane of claim 102 wherein  $X_3$  is furyl or thienyl.

107. The taxane of claim 106 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

108. The taxane of claim 106 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

109. The taxane of claim 102 wherein  $X_3$  is cycloalkyl.

110. The taxane of claim 109 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

111. The taxane of claim 109 wherein  $X_5$  is  $\text{-COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $\text{-COOX}_{10}$  and  $X_{10}$  is t-butyl.

112. The taxane of claim 102 wherein  $X_3$  is isobutenyl.

113. The taxane of claim 112 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is substituted or unsubstituted  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$  alkenyl, or  $\text{C}_2 - \text{C}_8$  alkynyl.

114. The taxane of claim 112 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

115. The taxane of claim 89 wherein  $X_3$  is furyl or thienyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl.

116. The taxane of claim 89 wherein  $X_3$  is substituted furyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

117. The taxane of claim 89 wherein  $X_3$  is substituted thienyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

118. The taxane of claim 89 wherein  $X_3$  is isobutenyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

119. The taxane of claim 89 wherein  $X_3$  is alkyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

120. The taxane of claim 89 wherein  $X_3$  is isobutenyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

121. The taxane of claim 89 wherein  $X_3$  is cycloalkyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

122. A pharmaceutical composition comprising the taxane of claim 1 and at least one pharmaceutically acceptable carrier.

123. The pharmaceutical composition of claim 122 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $\text{C}_1 - \text{C}_8$  alkyl,  $\text{C}_2 - \text{C}_8$

alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

124. The pharmaceutical composition of claim 123 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or  
5 C<sub>2</sub> - C<sub>8</sub> alkynyl.

125. The pharmaceutical composition of claim 123 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

126. The pharmaceutical composition of claim 122 wherein R<sub>7a</sub> is ethyl or propyl.

127. The pharmaceutical composition of claim 126 wherein X<sub>3</sub> is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>2</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

128. The pharmaceutical composition of claim 127 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted phenyl, 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is substituted or unsubstituted C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or  
5 C<sub>2</sub> - C<sub>8</sub> alkynyl.

129. The pharmaceutical composition of claim 127 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

130. The pharmaceutical composition of claim 123 wherein X<sub>3</sub> is furyl or thienyl, R<sub>7a</sub> is ethyl, and X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

131. The pharmaceutical composition of claim 123 wherein X<sub>3</sub> is substituted or unsubstituted furyl, R<sub>7a</sub> is ethyl, and X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

132. The pharmaceutical composition of claim 123 wherein X<sub>3</sub> is

substituted or unsubstituted thienyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

133. The pharmaceutical composition of claim 123 wherein  $X_3$  is isobutenyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

134. The pharmaceutical composition of claim 123 wherein  $X_3$  is alkyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

135. The pharmaceutical composition of claim 123 wherein  $X_3$  is 2-furyl or 2-thienyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

136. The pharmaceutical composition of claim 123 wherein  $X_3$  is 2-furyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

137. The pharmaceutical composition of claim 123 wherein  $X_3$  is 2-thienyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

138. The pharmaceutical composition of claim 123 wherein  $X_3$  is isobutenyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

139. The pharmaceutical composition of claim 123 wherein  $X_3$  is cycloalkyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

140. A composition for oral administration comprising the taxane of claim 1 and at least one pharmaceutically acceptable carrier.

141. The composition of claim 140 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_1 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

142. The composition of claim 140 wherein  $X_5$  is  $-\text{COX}_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

143. The composition of claim 140 wherein  $R_{7a}$  is ethyl or propyl.

144. The composition of claim 143 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl,  $C_2 - C_8$  alkyl,  $C_2 - C_8$  alkenyl, or  $C_2 - C_8$  alkynyl.

145. The composition of claim 144 wherein  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

146. The composition of claim 144 wherein  $X_3$  is furyl, thienyl or isobutenyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-COX_{10}$  wherein  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  wherein  $X_{10}$  is t-butyl.

147. The composition of claim 140 wherein  $X_3$  is alkyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

148. The composition of claim 146 wherein  $X_3$  is 2-furyl or 2-thienyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl or  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl.

149. The composition of claim 148 wherein  $X_3$  is 2-furyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl.

150. The composition of claim 148 wherein  $X_3$  is 2-thienyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

151. The composition of claim 146 wherein  $X_3$  is isobutenyl,  $R_{7a}$  is ethyl, and  $X_5$  is  $-COX_{10}$  and  $X_{10}$  is phenyl, or  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

152. The composition of claim 151 wherein  $X_3$  is isobutenyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-COOX_{10}$  and  $X_{10}$  is t-butyl.

153. A method of inhibiting tumor growth in a mammal, said method comprising orally administering a therapeutically effective amount of a pharmaceutical composition containing the taxane of claim 1 and at least one pharmaceutically acceptable carrier.

154. The method of claim 153 wherein  $X_3$  is 2-furyl, 3-furyl, 2-thienyl, 3-



thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

155. The method of claim 154 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

156. The method of claim 153 wherein R<sub>7a</sub> is ethyl or propyl.

157. The method of claim 156 wherein X<sub>3</sub> is 2-furyl, 3-furyl, 2-thienyl, 3-thienyl, 2-pyridyl, 3-pyridyl, 4-pyridyl, C<sub>1</sub> - C<sub>8</sub> alkyl, C<sub>2</sub> - C<sub>8</sub> alkenyl, or C<sub>2</sub> - C<sub>8</sub> alkynyl.

158. The method of claim 157 wherein X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

159. The method of claim 153 wherein X<sub>3</sub> is furyl, thienyl or isobutenyl, R<sub>7a</sub> is ethyl, and X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

160. The method of claim 159 wherein X<sub>3</sub> is alkyl, R<sub>7a</sub> is ethyl, and X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

161. The method of claim 159 wherein X<sub>3</sub> is 2-furyl or 2-thienyl, R<sub>7a</sub> is ethyl, X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl or X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl.

162. The method of claim 161 wherein X<sub>3</sub> is 2-furyl, R<sub>7a</sub> is ethyl, X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl.

163. The method of claim 159 wherein X<sub>3</sub> is 2-thienyl, R<sub>7a</sub> is ethyl, X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

164. The method of claim 159 wherein X<sub>3</sub> is isobutenyl, R<sub>7a</sub> is ethyl, and X<sub>5</sub> is -COX<sub>10</sub> and X<sub>10</sub> is phenyl, or X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

165. The method of claim 164 wherein X<sub>3</sub> is isobutenyl, R<sub>7a</sub> is ethyl, X<sub>5</sub> is -COOX<sub>10</sub> and X<sub>10</sub> is t-butyl.

166. A method of inhibiting tumor growth in a mammal, said method comprising orally administering a therapeutically effective amount of a pharmaceutical composition containing the taxane of claim 89 and at least one pharmaceutically acceptable carrier.

167. The method of claim 166 wherein  $X_3$  is isobutenyl, furyl or thienyl,  $R_{7a}$  is ethyl,  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl or  $X_5$  is  $-\text{COOX}_{10}$  and  $X_{10}$  is t-butyl.

168. A pharmaceutical composition comprising the taxane of claim 89 and at least one pharmaceutically acceptable carrier.

169. A pharmaceutical composition comprising the taxane of claim 93 and at least one pharmaceutically acceptable carrier.